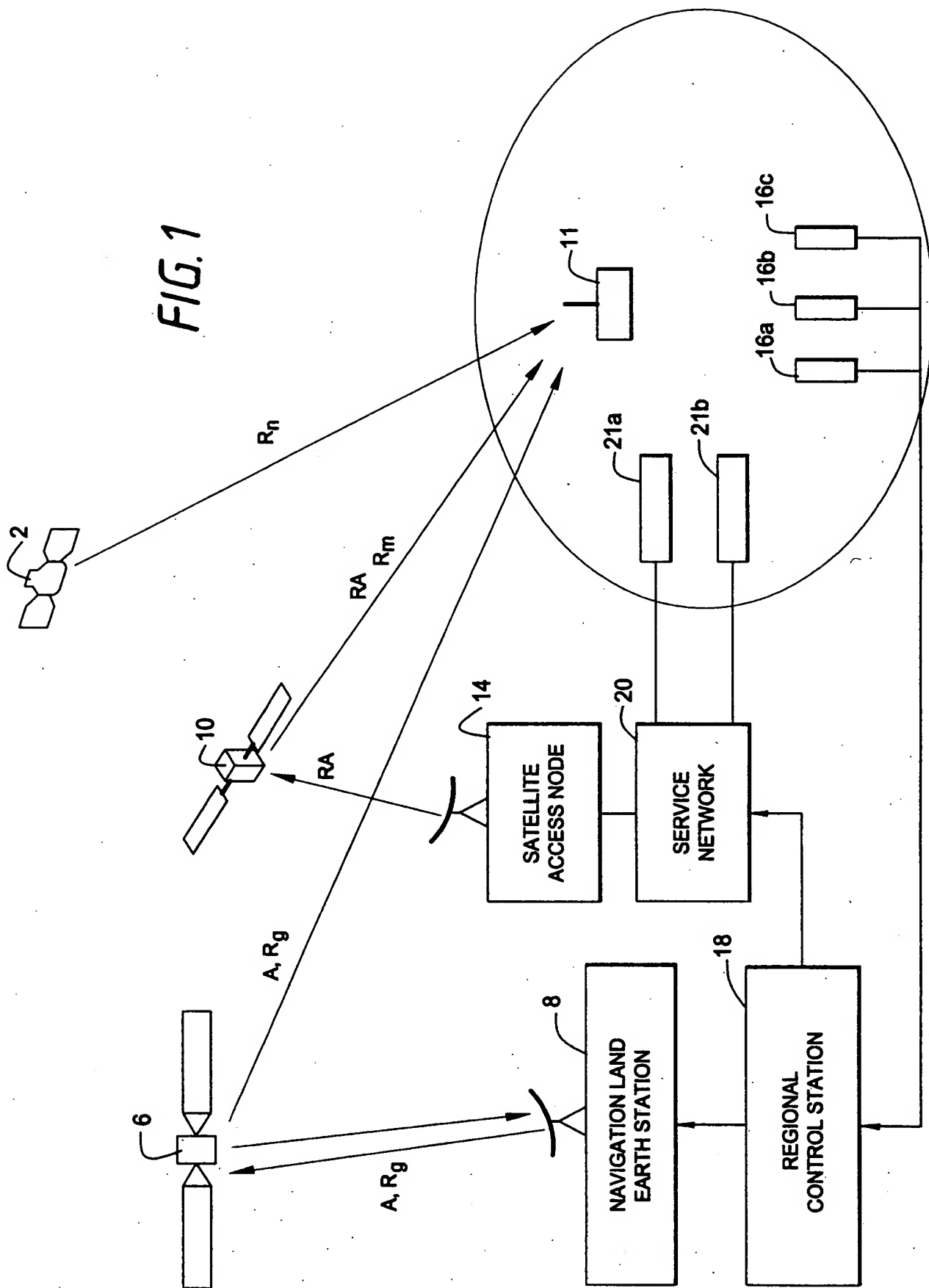


FIG. 1 is a block diagram illustrating a satellite navigation system architecture. The system includes the following components and connections:

- Navigation Land Earth Station (8):** A ground station that communicates with the Navigation Satellite (6) and the Regional Control Station (18). It is connected to the Regional Control Station (18) via a bidirectional link.
- Navigation Satellite (6):** A satellite in orbit that receives signals from the Navigation Land Earth Station (8) and transmits signals to the Satellite Access Node (14) and the Mobile Station (10). The signal path from the Navigation Land Earth Station (8) to the Navigation Satellite (6) is labeled  $A, R_g$ .
- Satellite Access Node (14):** A ground station that receives signals from the Navigation Satellite (6) and transmits signals to the Mobile Station (10). The signal path from the Satellite Access Node (14) to the Mobile Station (10) is labeled  $RA$ .
- Service Network (20):** A network that connects the Satellite Access Node (14) to the Regional Control Station (18) and the Mobile Station (10). It is connected to the Satellite Access Node (14) via a bidirectional link and to the Regional Control Station (18) via a bidirectional link.
- Regional Control Station (18):** A ground station that manages the system, receiving signals from the Navigation Land Earth Station (8) and the Service Network (20), and transmitting signals to the Navigation Land Earth Station (8) and the Service Network (20).
- Mobile Station (10):** A user device that receives signals from the Navigation Satellite (6) and the Satellite Access Node (14). It is connected to the Service Network (20) via a bidirectional link.
- Service Network (20) Internal Structure:** The Service Network (20) is composed of several interconnected blocks:
  - Block 21a:** A block that receives signals from the Satellite Access Node (14) and transmits signals to Block 21b.
  - Block 21b:** A block that receives signals from Block 21a and transmits signals to the Mobile Station (10).
  - Block 16a, 16b, 16c:** A set of three blocks that receive signals from Block 21b and transmit signals to the Mobile Station (10).
  - Block 11:** A block that receives signals from the Mobile Station (10) and transmits signals to the Service Network (20).

The diagram also shows a **Navigation Satellite (2)** in orbit, which is part of the overall satellite constellation. The signal path from the Navigation Satellite (2) to the Mobile Station (10) is labeled  $R_n$ .



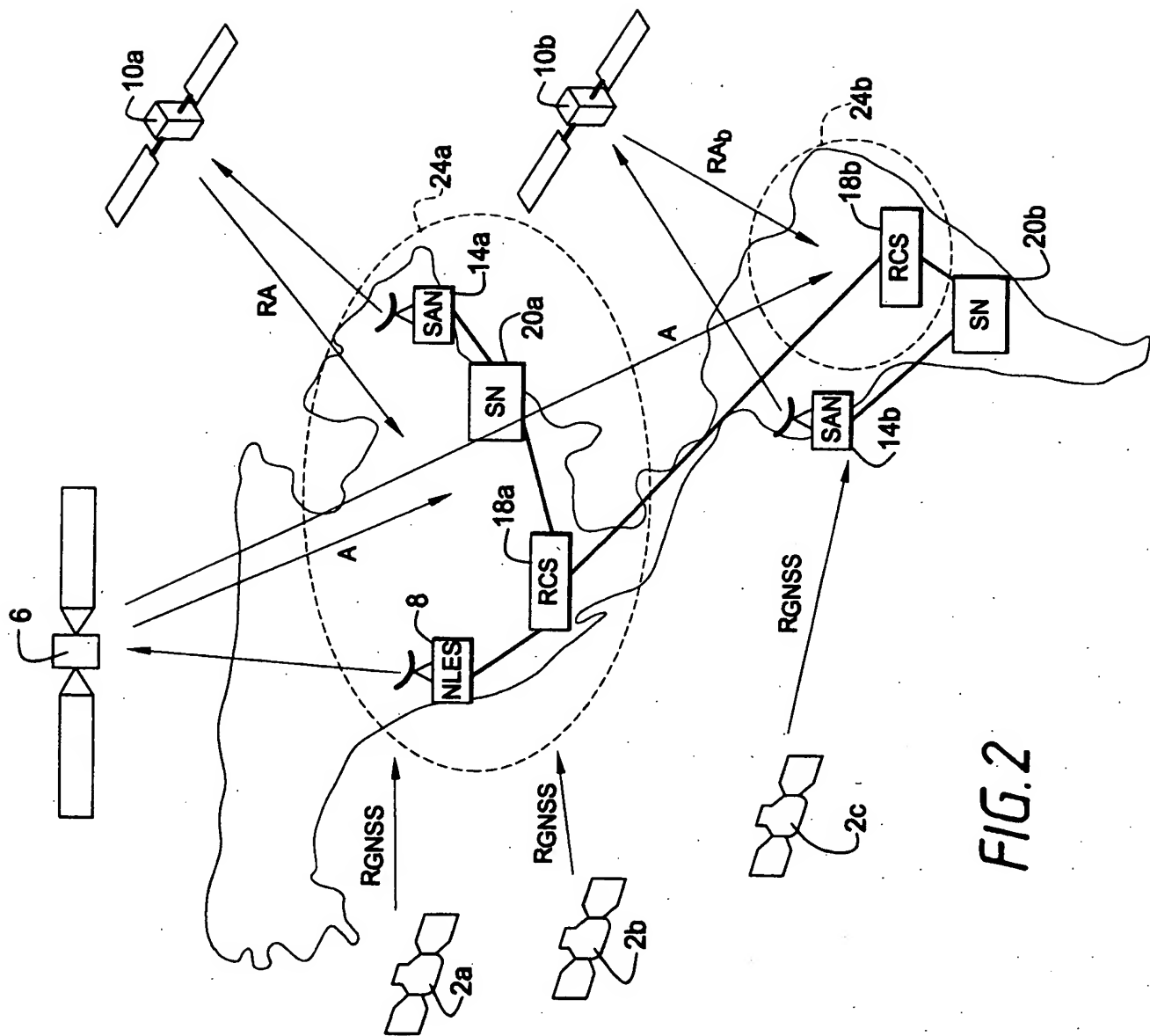


FIG. 2

FIG. 3

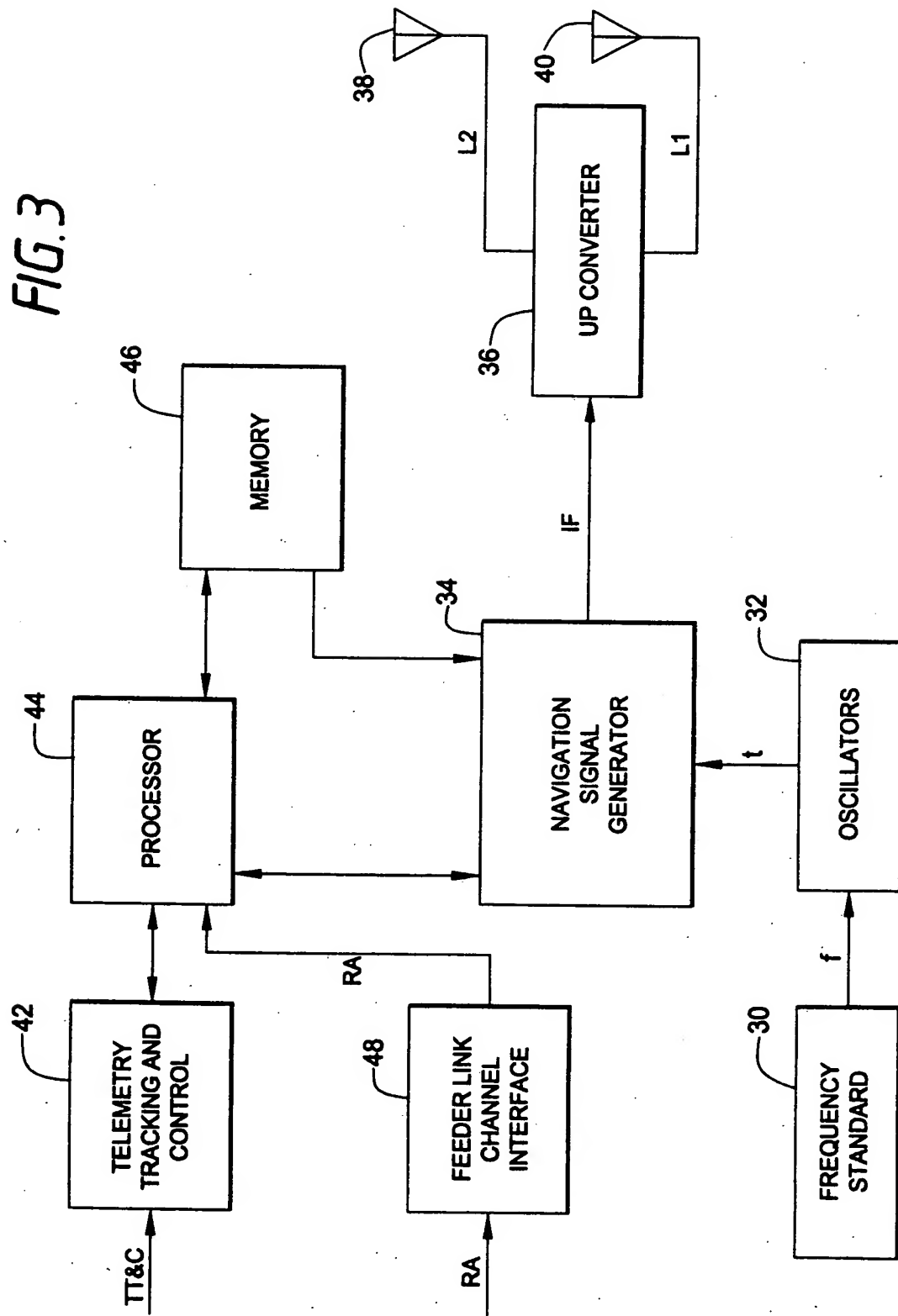


FIG. 4

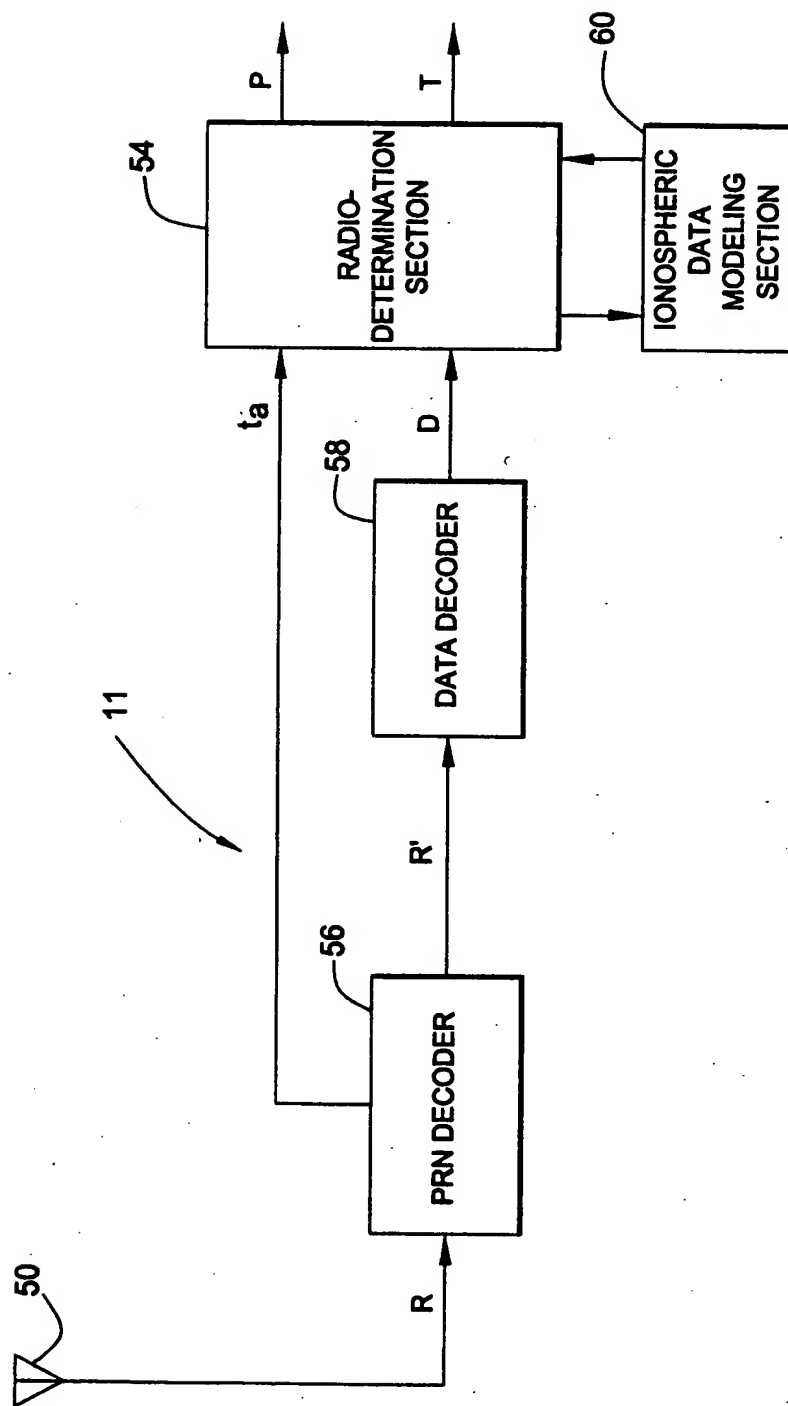
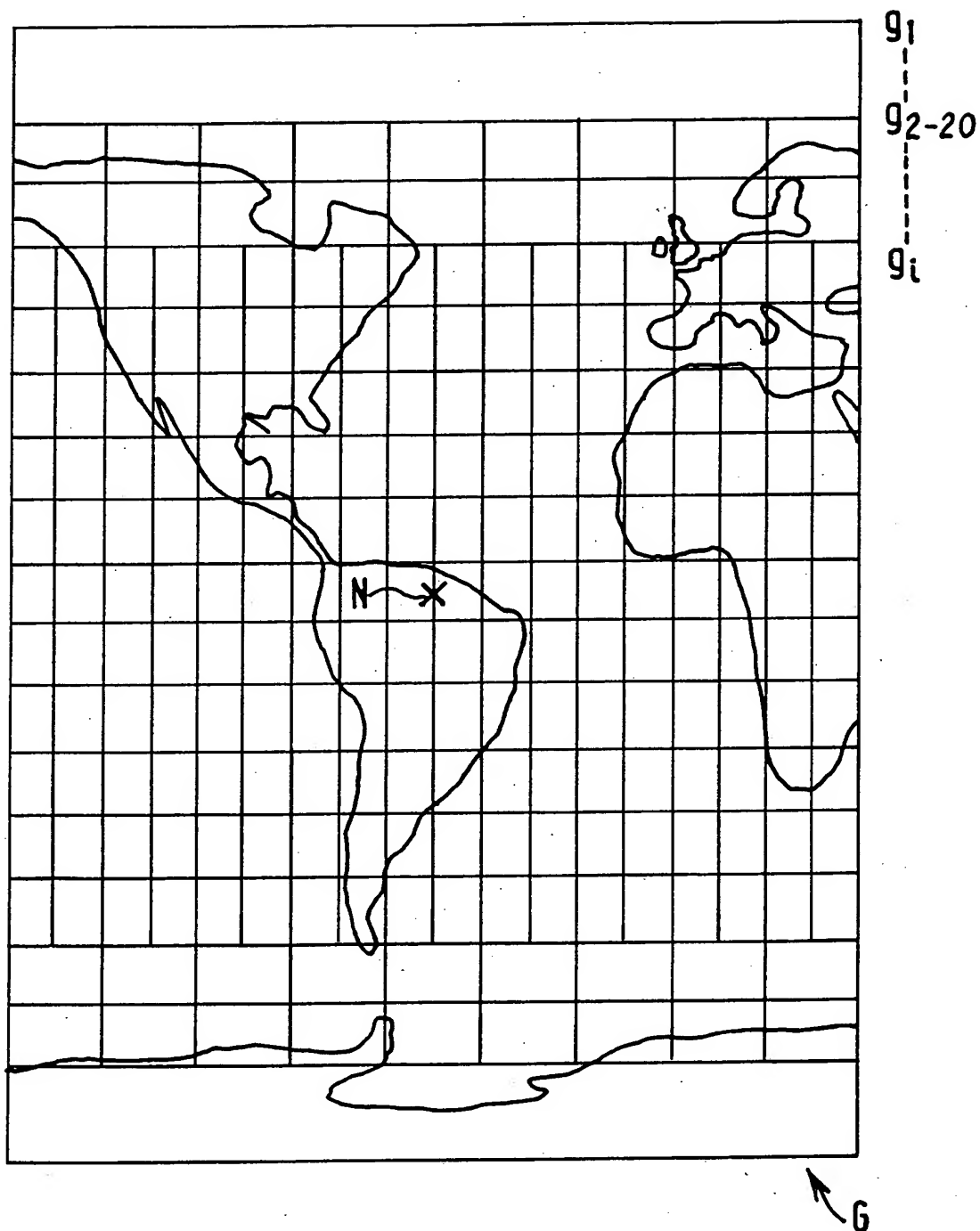


FIG. 5



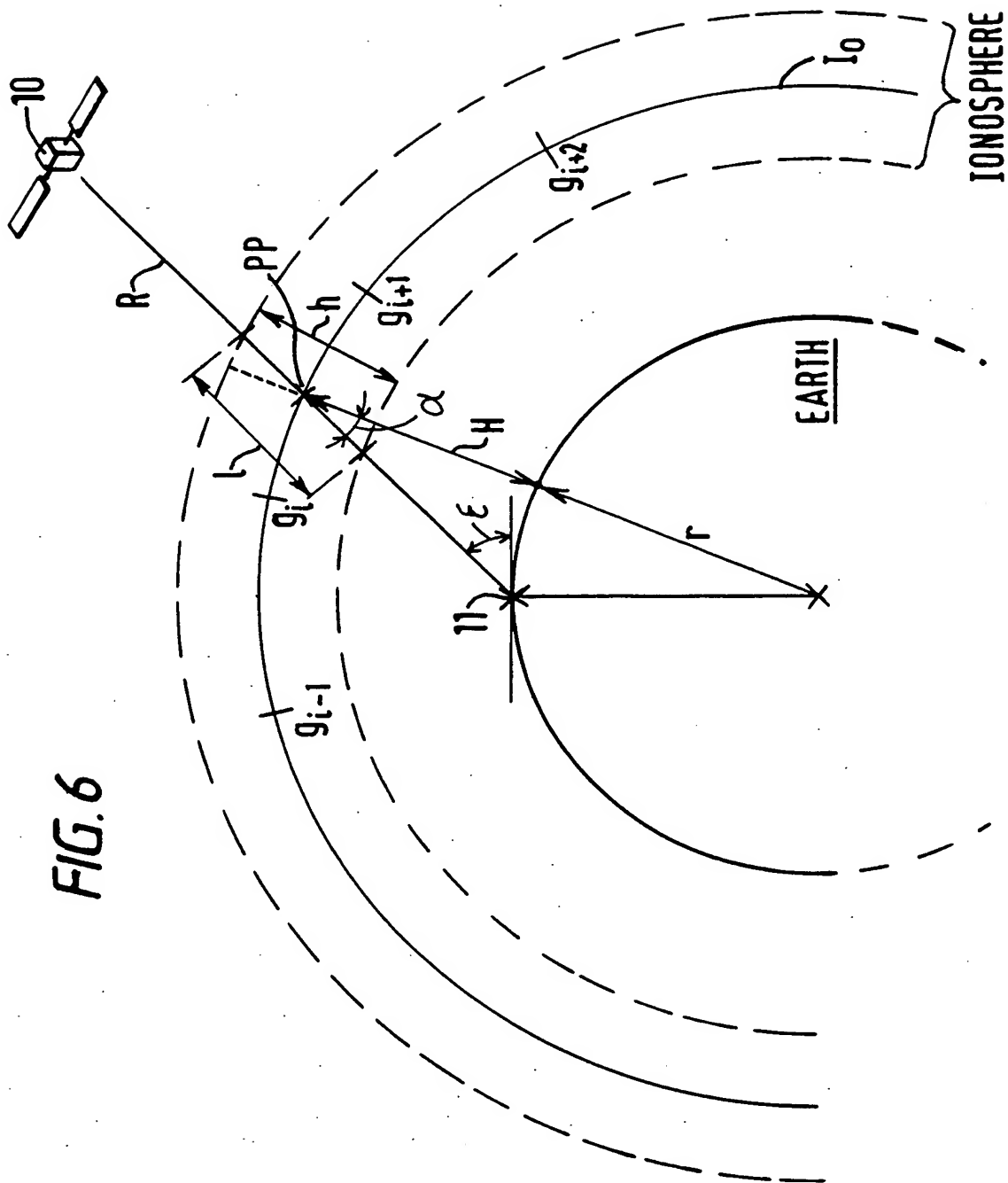


FIG. 6